DOCUMENT RESUME

ED 317 197 IR 014 287

AUTHOR Vitchoff, Lorraine G.
TITLE Initiating the Use of a Microcomputer Database in an Elementary School Setting.
PUB DATE 89
NOTE 92p.; Ed.D. Practicum, Nova University.
PUB TYPE Dissertations/Theses - Practicum Papers (043) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Computer Assisted Instruction; *Computer Literacy; *Databases; Elementary Education; *Elementary School Students; *Faculty Development; Instructional Development; Microcomputers

ABSTRACT

This practicum was designed to initiate the use of databases in an elementary setting. The primary goal was to establish a workable method to incorporate the use of databases and instruct teachers on how to use a sophisticated computer application. The peripheral goal was to transmit the newly-learned skills of the teacher to the students. A monitoring checklist was used to obtain pre-training data on teachers' knowledge of databases. Teachers were then exposed to a variety of databases and were encouraged to develop their own uses. A post-training checklist was then administered. Students were also instructed on how to use databases. Objectives for the teachers were to define the word "database"; create a database and use the various functions (including sorting, arranging, selecting, printing, and copying); and demonstrate the use of a database for classroom instruction. The objective for students was to define "database" and demonstrate the ability to execute the find, arrange, and select commands. Data are presented in the form of seven tables and six figures. Analyses of the data revealed that 100 percent of the participants met the majority of the behavioral objectives. Appendixes include the faculty and staff person surveys and their results, checklists used for pre- and post-monitoring of teachers and students and their results, a calendar of activities for the project, workshop agendas, a sample lesson plan, and the post-training and implementation survey and its results. (26 references) (Author/GL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED317197

Initiating the Use of a Microcomputer Database in an Elementary School Setting

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

by
Lorraine G. Vitchoff
Cluster XXVI A

A Practicum II Report Presented to the Ed.D. Program in Early and Middle Childhood in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

Nova University

1989

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Lorraine Vitchoff

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

IR014287

PRACTICUM REPORT

Center for the
Advancement of Education
Ed.D. Program

3301 College Avenue
Fort Lauderdale, Florida 33314
305/475-7300

NOVA UNIVERSITY

PRACTICUM APPROVAL SHEET

This practicum took place as described .

Verifier: Carol Lou Carrodus
Carol L. Carrodus

Building C.A.I. Staffperson
Title

June 1, 1989
Date

This practicum report was submitted by Lorraine G. Vitchoff under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Early and Middle Childhood and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved: David P. Yens

sept. 28, 1989
Date of Final Approval of Report

David Yens, Ph.D., Advisor

TABLE OF CONTENTS

Page

TABLE OF CONTENTS iii

ABSTRACT v

Chapter
I INTRODUCTION 1

Description of Community 1
Writer's Work Setting and Role 1

II STUDY OF THE PROBLEM 3

Problem Description 3
Problem Documentation 4
Causative Analysis 6
The Related Literature 7

III ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS 13

Statement of General Goals 13
Specific Objectives 13
Plans for Analyzing Results 14

IV SOLUTION STRATEGY 15

Discussion and Evaluation of the Solutions 15
Description of Selected Solution 16
Report of Action Taken 17

V RESULTS, CONCLUSIONS AND RECOMMENDATIONS 22

Results 22
Conclusions 31
Recommendations 32
Dissemination 33

REFERENCES 34

Table (cont.)
3 Results of the Teachers' Pre- and Post Monitoring Checklists - True Responses for Objective #2..... 25

4 Results of the Teachers' Pre- and Post Monitoring Checklists - True Responses for Objective #3..... 27

5 Results of the Student's Pre- and Post Monitoring Checklists - True Responses for Objective #4..... 28

6 Number of Students Assigned to Each Teacher..... 29

7 Post Implementation Survey Results by Percent..... 30

Figure
1 Results of Teachers' Pre- and Post Monitoring Checklist - True Responses for Objectives #1, #2 & #3..... 22

2 Results of the Student's Pre- and Post Monitoring Checklists - True Responses for Objective #4..... 22

3 Results of Teachers' Pre- and Post Monitoring Checklist - True Responses for Objective #1..... 24

4 Results of Teachers' Pre- and Post Monitoring Checklist - True Responses for Objective #2..... 25

5 Results of Teachers' Pre- and Post Monitoring Checklist - True Responses for Objective #3..... 27

6 Results of the Student's Pre- and Post Monitoring Checklists - True Responses for Objective #4..... 28

ABSTRACT

Initiating the Use of a Microcomputer Database in an Elementary School Setting. Vitchoff, Lorraine G., 1989: Practicum Report, Nova University, Ed.D. Program in Early and Middle Childhood. Descriptors:
Computer Assisted Instruction/Staff Development /Microcomputers/ Computer Managed Instruction/Elementary Education/Teacher Training/ Computer Aided Instruction/Database Instruction

This practicum was designed to initiate the use of databases in an Elementary school setting. The primary goal was to establish a workable method to incorporate the instruct the teachers on how to use a sophisticated computer application. The peripheral goal was to branch the newly learned skills of the teacher to the students.

The writer began the implementation by administering a pre monitoring checklist to obtain a pre and post concept of the teachers knowledge in the area of databases. Teachers were trained on how to use a database. Teachers were also exposed to various uses of databases and developed their own uses. A specific concentration was given to the design, pacing and environment of the training process. Students were also instructed on the basics of how to use a database.

The results of the practicum were positive. Analysis of the data revealed that 100% of the participants met the majority of the behavioral expectations. The objectives were: (1) Twelve of the fifteen teachers in grades 3 through 6, remedial, and special education will be able to define the word database and describe its uses, (2) This same group will be able to demonstrate their abilities to create a database and use the various functions including;sorting arranging, selecting, printing and copying information with 75% accuracy, (3) twelve of the fifteen teachers in grades 3 through 6, remedial, and special education will demonstrate their use of a database as a tool to instruction in their classroom and have created a classroom database, and (4) The students of grades 3 through 6 will be able to give a definition of database and demonstrate their ability to execute the find, arrange and select commands.

CHAPTER I

INTRODUCTION

Description of Community

The city in which this practicum took place is located on the northeastern seaboard of the United States. Its present population is approximately 40,000. Up until 1976 the city's primary source of revenue was from summer tourism and convention business throughout the year. Presently, the primary source is from industry.

Ten years ago the socioeconomic makeup was predominantly middle class families. This group has since moved out of the area or is sending their children to parochial or private schools. The majority of the city's residents and student population is now of the lower-middle to lower socioeconomic background.

Writer's Work Setting and Role

The school district has nine elementary schools, two junior high schools, and one high school. Its total student population is approximately 6,300. The high school population is comprised of students from the city and three small sending districts.

The district's elected board of education works closely with the district superintendent setting standards and policies for the local educational system. These standards and policies are implemented by the administrative and teaching staff of the district.

The school in which the practicum took place is one of the nine elementary schools in the public school district. It is located in a predominantly Caucasian community. The present student population of the school is approximately 400 students. The ethnic makeup is 16% Hispanic, 29% Black, 4% Asian and 51% Caucasian. The teacher population is 25, broken down to 12 Black, and 13 Caucasian.

The writer has been employed by the public school district for 11 years. The first 3 years were in the capacity of classroom teacher and the following 3 years as a specialist teacher in the areas of chapter one, compensatory education, academically gifted, and English as a Second Language. During this period of

teaching, the writer also served as the unit leader for the first grade classroom teachers and the building representative for the implementation of the state department of education's plan of action. Presently, the writer is serving in her sixth year as an administrator in the role of coordinator of the Computer Assisted Instruction and the Intellectually Gifted programs.

This practicum will be addressed from the standpoint of the writer's role as Coordinator of Computer Assisted Instruction. The Coordinator of Computer Assisted Instruction services all elementary and junior high schools as a member of the central administrative staff. The general functions of this position are the development, implementation, and monitoring of the use of the computer as a supplemental tool to instruction.

The writer was appointed by the state department to serve on the commissioner of education's advisory council for educational technology. She is a member of various national, state and local education related associations as well as the advisory for the city's Teen Service Center. Other activities related to education in which the writer is involved are on-going curriculum and policy planning in the local district and speaker/presenter at local, county, and state conferences.

The writer's educational background includes a bachelor's degree in early childhood education and a master's degree in educational supervision and administration. She is certified by the department of education in elementary and junior high along with holding a principal/supervisor certificate.

CHAPTER II
STUDY OF THE PROBLEM

Problem Description

The school in which the practicum took place has been using computers to supplement instruction in the subject areas of reading, math and language arts by means of tutorial, drill and practice and reinforcement type software. Two years ago the district purchased microcomputers and instructional software to be used as a means to provide diverse teaching strategies and to develop the students' appreciation of the computer as a source of information and as a learning tool. A 2 hour training session covering how to use the computer and a brief introduction to available software was provided. The training was required for the teachers of grades 4 through 6 because the superintendent felt this was where the priority should be placed for computer use. Suggestions and guidelines for the process of incorporating this new media into the classroom were also furnished. However, the use of computers was entirely up to the individual teacher or building principal. Since the above mentioned training the administration has not permitted any in-depth updates or comprehensive computer workshops to be held.

The writer recognized that the staff and students were interested in using the computer. Each visit to the building where the practicum took place verified the student and staff interest. The writer consistently observed all the computers in use and the students anxiously awaiting their turn or scheduled time for use.

All of the teachers came up with creative ways to incorporate, into their teaching, the tutorial, drill and practice and reinforcement software. They were beginning to exhaust the ways the computer could be used with these types of lessons/software. The computer had much more versatility beyond how it was being used. The staff needed to be aware of these varied uses and trained in methods to incorporate them so they could in turn relay to the students the diversity of the computer and its software.

The recognition of this state of affairs came about as a result of the writer's attendance at several computer conferences and training programs. Through observations during building visitations and discussions with the building principal, the staff person for computer assisted instruction, and several classroom teachers the writer became aware that this building was ready for new ways to use the computer.

Given the number of computers in the building and software available, the ideal situation would be as follows:

1. The teachers of grades third through sixth and the remedial program teachers would know what a computer database is and how it works.

2. The database would be applied to meet their teaching responsibilities.

   a. Teachers would document the use of a database in their instruction which is geared to the development of higher level thinking skills.

   b. Teachers would use the database software to manage student data necessary to meet their bookkeeping responsibilities.

3. Students would have a basic understanding of what a database is and how it works.

   a. Students would be able to define a database.

   b. Students would be able *find*, *select* and *arrange* information in a database.

In summary, the problem was that the teachers of grades 3 through 6 were not using the computer to its fullest potential. The need for a training strategy and implementation method was evident to the writer from several different facets; (1) knowledge of the diverse uses of the computer, (2) information and skills the students will need to succeed in today's technological world, (3) the teachers' readiness to use and learn the computers versatility and (4) the students' accomplishments on the computer.

Problem Documentation

Documentation of the problem was obtained in varied forms. These forms include

1. the writer's observations during periodic visitations;
2. conferences with the building principal, staff person for computer assisted instruction and teachers;
3. presentations from various state and regional conferences, seminars and technology meetings;
4. faculty survey (see Appendix A);
5. items from a CAI staffperson survey (see Appendix B);
6. news articles written by the teachers for district wide newspaper.

While visiting the school on several different occasions, the writer observed that all of the computers were in use during the instructional day and there was a high interest in acquiring more computers, software and methods of use. Classroom visitations showed signs of computer use by students on a scheduled basis with activities directly relating the content area of the subject being taught. Three specific log entries from building visitations and telephone communication were:

Tuesday, January 26, 1988 - Fifth grade students working feverishly at the computer, however, the results of their work was still being managed manually.

Thursday, February 25, 1988 - A scheduled appointment from a teacher request for possible ways to monitor homework completion. All computers in use, requests for more software.

Thursday, May 5, 1988 - Faculty meeting; request for other ways to use the computer.

Upon each building visitation the writer consulted with the principal regarding the status of computer use. The principal conveyed the same message that the observation had conveyed. The teachers and students love the computer and are always trying to find new ways to put it to use. She further expressed her approval of their interests and welcomed any services the writer could provide. The Computer Assisted Instruction (CAI) staffperson expressed a need for more software. She further stated that the teachers were beginning to exhaust the uses of the computer and she was at the limits of her knowledge.

The interest was so exuberant that, when visiting the building, the writer could not leave without several teachers leaving their classroom to speak with her regarding ways they were using the computer, request for new software, additional workshops and management capabilities of the computer.

The subject matter of each conference, seminar and technology meeting that the writer attended during the past two years had served to reinforce her perceptions that something had to be done to keep the school district current in the uses of technology. Topics included the use of databases for classroom/building management and instruction. On March 25, 1988 the writer attended the state's Educational Technology Conference. One of the programs addressed the uses of database to supplement instruction. Another area of database use was addressed at the annual state conference for federal program administrators. This speaker focused on teachers using the database to free them from paper work and to give more time for instructional tasks.

Two surveys were circulated. One was distributed to CAI staffpersons throughout the district , classroom teachers, remedial and special education teachers of grades kindergarten through 6 requesting them to answer the questions as they applied to their classroom situation (see Appendix A). Thirty-five faculty surveys were distributed and all were returned. This represented a return rate of 100%. The other survey pertaining to the CAI staffpersons' role and experiences (see Appendix B) was distributed to each staffperson, also with a return rate of 100% The results of these surveys are presented in Appendix C for the faculty survey and Appendix D for the CAI staffperson survey. Brief compendiums of the questions follow.

In response to the statement, " I am confident with the procedures for working the computer," 100% of the intermediate teachers (grade 3, 4, 5,& 6) indicated that they were confident. Ninety four percent, 33 of the 35 teachers in this same group, responded that

they were familiar with the software and its contents. The survey also showed that 29 of the teachers in this same group used the computer every day and 6 used it at least at least 2 - 4 days per week.

The next three items dealt with the topic of databases. Some 85.7% (30) of the respondents indicated that they were not familiar with the concept of a computer database. The remaining five persons responded that they were somewhat familiar with the concept. Thirty-two of the 35 teachers, 91.4%, indicated that they did not know how to use a computer database. Also, 91.4% (32) of respondents noted that they did not have a working knowledge of how a database could be applied to their classroom.

In response to the statement, "I feel my students are proficient in the use of the CAI software.", 100% of the teachers felt the students were proficient.

Item #5 requested the respondents to note any concerns, activities or software they would like the writer to consider relative to their use and the students' use of the computer. Twenty-two respondents requested workshops on how to store information about students. Fifteen requests were made for new software and 29 persons welcomed anything new they could learn about the computer that would not take up a lot classroom time to teach.

The survey provided the writer with hard data to support her observation that the computers and software were being used and the teachers were ready to move on to a more sophisticated use of the computer.

Five points from a CAI staffperson survey also provided data to document the problem to be addressed by this practicum. Items # 6 and 8 addressed the staffperson's role and their perception of the classroom teachers in their buildings relative to workshop topics from which they would benefit. The greatest response was in the area of learning how to run a database program and its applications. All of the staff indicated this need. Items #7 and 9 dealt with the most productive time for training to take place. The responses to these items will be taken into consideration when planning for training. Item #10 surveyed the CAI staff as to their perception of the teachers' interest in learning about computers. Eight responded that they strongly agreed and the remainder agreed.

The information provided from this survey indicated a readiness for further use of the computer and specifically the use of a database.

Several articles on the topic of computer use in the building were submitted for publication in the district-wide newspaper (see Appendix E). The activities described in these articles clearly evidenced the preparedness by the students and the teachers to become more sophisticated in the use of computers.

Causative Analysis

The writer saw the causes for the problem of limited ways the computer was being used coming from several different roots. The most common cause was that teachers' lacked knowledge of any other ways in which the computer could be used. They were quite proficient in the varied uses of standard CAI reading and math software. However, they did not have the knowledge of applications software, such as database, to be able to apply it to their classroom. All of the teachers were interested in expanding their uses of the computer.

The lack of available district training and updates on newly developed software and uses was also a major contributor to the problem. Each teacher needed to know what new software was available in the district or for purchase and the methods to use it.

The third cause was the root from which the two above mentioned causes evolved. It was the lack of knowledge on the part of top administrators about the strides that had been made in computer usage and the need for constant updating/awareness and training of teachers. The varied methods to incorporate the computer into daily lessons and uses in the classroom needed to be recognized and respected by the upper level administrators and then related to the teachers and principals.

The Related Literature

Statement of the Issues

Significance of this Issue

The massive change that is sweeping the nation as it enters the age of an information society is strongly influencing the educational system. The purchase of computers and their uses is one of the major factors causing change (Niemiec, 1987). Oettinger (1969) proposed that much in the very structure of education worked against effective innovation of the computers. He characterized education as rigid, yet fragmented, lacking both centralized authority and genuine flexibility. Oettinger's findings represent technology's recent past use of mainframe computers and terminals. Sheingold (1983) reports that with the coming of the microcomputer, widespread use of technology in education is now possible. The basis for this widespread use is that the personal computer fits the essentially local, decentralized nature of education in the United States.

Callison (1985) emphasized the need for school districts to prepare for this massive change even if teachers resist it. However, Wilkinson (1983) threw a positive light on the

acceptance of computers in the schools when he found that thorough teacher training on computers and the development of confidence in its uses led to an expedient integration of the computer into the educational setting.

Components of this Issue

There are several components that face the the elementary schools during the program planning stages or after the purchase of computers.

Access to the computer is one of these components. Computers need to be accessible to the teachers and students in order to be used effectively (Lamberic, 1984). Computers that are under lock and key, housed in a remote location or a location that is one teacher's eminent domain, are not likely to be inviting for exploration and use.

The emergence of new staff and/or new staff roles has come about in the response to microcomputers in the schools (Grady, 1983). The responsibilities for teacher training, hardware security and maintenance, and software selection are a few of the necessities that have brought about the need for new staff or new staff roles.

Integrating the use of the computer into the curriculum is another component of the issue being reviewed. Knowledge of software contents must be present before they can be incorporated into a lesson.

Research on the Components

Access to the Computers

The physical placement of the computers was cited as a common issue in many school districts. Numerous studies (Yeloushan, 1986, Admarel, 1976, and Jamison, 1974) have found the most effective use of the computers to be in the individual classrooms. The immediate access and ability to integrate the software content into the lessons are two of the factors which make this location of the computers the most instrumental.

Olson (1986) reinforces the key components stated above. He adds that by having access to the computer and time to become comfortable with the computer, the teacher gains clarity on the issue of computers as a separate subject and begins to see them as a tool for instruction. Once again, the location that is most amiable and effective for the teacher to become comfortable with and incorporate its uses is the classroom.

New Staff and New Staff Roles

Several writers (e.g., Olson, 1986, Yeloushan, 1986, Naiman, 1982 and Hunter, 1980) suggested the hiring of a computer coordinator or designating of a specialist staff person whose role would be to conduct training sessions for teachers and aids. These

sessions would entail demonstrating and teaching the use of the computer and its software, and showing how to incorporate computer use in the various subject areas. The availability of support personnel was found to be a common factor in successful training and integration of computers in the classroom.

The task of successfully and smoothly integrating the computer is not achieved by teacher participation only. Miller (1987) found that the support and participation of key administrators during teacher training facilitated positive attitudes toward the the task of integrating the computers in the classroom. She further stated that these various support personnel also contributed to a broader knowledge base of how the computer can be used.

The information generated in the training sessions is pertinent to the principals' role as educational leader and to their responsibilities for the location of building equipment and the physical layout of the building. This information is pertinent because with this knowledge the principal has an understanding of the uses of the computer and can be constructively supportive of the teachers in his/her building.

Integration of the Computer

Staff training

Spencer (1986) reported that the essential aspect of computer use in the classroom is the teacher training and access to the computer. Her report stated that the task facing the teachers is not only that they become computer literate but that they become creative about how to use the computers to teach. The selection of software from the abundance at the teachers' disposal is another factor involved in putting the computer to creative use. Schools recognized as being on the leading edge of computer use have gotten there by careful planning, enthusiasm, and determination.

Another method proven to be effective in the teacher training process, cited by Wilkinson (1983), was the identification of a small number of teachers who are interested in computers and have used them in their classrooms. He states that, given suitable facilities and some release-time, these teachers can serve as expert consultants to their fellow teachers, thereby fostering surges of interest and activity.

Interestingly, all of the above mentioned methods involve having the novice teacher learn from an expert who is from within the school or school district.

Establishing a support system and training personnel is only the beginning of the teacher training process. The development of a comprehensive and efficient training program is essential. Yeloushan (1986) suggests the key components to be setting specific goals for each training session and using separate hardware and software instruction with at

least 45 minutes a week to review the concepts presented at the training session. She further states that this review time should be a time when the teachers can give their undivided attention to the task. Lamberic (1984) states a computer is so powerful and so flexible that it can become almost whatever one can imagine it to be. He believes one can not imagine its uses if one hasn't had ample time to practice. Therefore, computer availability and practice time are seen as essential.

Another component that Olson sees as being essential to effective computer training and integration is the participation of the building principals. The International Council for Computers in Education (ICCE) sees the constant integration of the new computer uses to be of such importance that they adopted a Code of Ethical Conduct (Education Computer News, 1988). The continuous updating and training of teachers is emphasized in the following statement which is one of the commitments that is stated in the code; "To help teachers keep up with current trends, research and literature related to computer developments affecting education" (p.70).

Classroom Use

The task of integrating the use of computers into the elementary classroom has brought about a nationwide concern as to the preparedness and commitment of educators to this task. Hassett (1984) found that computers, in education, are being purchased more so for the presence of the computer in the building rather than with a specific educational goal. The results of a nationwide survey conducted by the Educational Research Services (1986) reported 56.5 percent of the responding districts used their computers for "computer assisted instruction," however, the process and application of this terminology was inconsistent.

Chambers (1982) defines two ways computer assisted instruction (CAI) can be used to support instruction. These are adjunct and primary CAI. Adjunct CAI is the use of courseware for enrichment or reinforcement of learning that is covered in the regular classroom lessons. Primary CAI is the using the courseware to replace the regular classroom lesson. Chambers notes adjunct CAI to be the approach which is used more in the elementary educational field. He states that the use of computers in individual classrooms during the day with students rotating on and off of the computer is a successful method with adjunct CAI.

One of the areas that Fisher (1983) found to be most effective when looking at the research on CAI was CAI supplementing the curriculum with teacher input. He notes that no teacher input was less effective than when teachers did have at least moderate input into the uses of CAI to supplement the curriculum. His three part table divided the categories of

teacher input relative to the effectiveness of CAI as a supplement as "most effective", "moderately effective", and "less effective".

Interrelationship of the Components

Hannah's (1987) use of the computer in an elementary school setting extended beyond the drill/practice and enrichment/reinforcement uses. He found data base activities to have the power to assist students in developing creativity, synthesis, and evaluation skills which helped them become better critical thinkers. The three basic search strategies that he emphasized were: (1) *arranging*, (2) *finding*, and (3) *selecting*. Through the use of a piece of software called AppleWorks, Hannah had teachers and students create and use databases that were useful in the classroom. His uses followed Fisher's (1983) findings that teacher input into the uses of CAI was valuable.

Software review and familiarity is a key component to successful integration of computer use. Rose (1982) found the use of teacher made evaluation processes an acceptable and useful tool.

Various issues influencing CAI have been highlighted. The setting of specific goals, teacher preparedness, and methods of use are all contributing factors to the success of using computers in the elementary setting. Can one component bring about a successful CAI program?

Sheingold's (1983) research based on levels, or contexts, within which an educational innovation takes place included the "school system", "individual school", and "classroom". She found decisions, events and beliefs at each level ultimately affecting the nature and scope of the computer impact.

When computers were present without teacher training the findings were that a small group of self-motivated, self-taught teachers using the computers were the only staff that used the computer. Rose (1982) found this type of situation resulting in an inequity of student exposure to the new technology. The absence of an established process and commitment to training was often due to the lack of appropriately assigned personnel to the task (Hunter, 1980).

As Yeloushan (1986) found, staff training sessions must have specific goals accompanied by practice time. She emphasized that a crash course on the use of the computer and software available serves no constructive purpose and results in rejection of the computer rather than acceptance and integration . The awareness of software content and use is essential for effective use of the computer.

The lack of administrative awareness brought about unrealistic expectations of the computer or a resistance to set specific goals for integrating the computer into the

curriculum (Olson, 1986). Many teachers found their principals requiring the teaching of computers as a separate subject when the software available was that of a supplemental nature to the subjects being taught in the curriculum.

Conclusion

Cory (1983) concludes that the full implementation of computer technology in a school system is a much more complex change than the implementation of a new method for teaching reading or even the restructuring of schools from open-space to self-contained. She found that school systems go through four different stages before they fully utilize computers. Eliminating these stages is the direction in which researchers are focusing.

Niemiec (1987) cites a a need for more research on CAI. He states that too few rigorous studies are available to provide satisfactory answers to questions that could be settled by quantitative analysis. He observes that most of the studies on CAI were done during a time when the cost of computing was much higher than it is today, thus leaving a question about the cost effectiveness of CAI now that the 1970 microcomputer revolution has settled. Another area he recognizes as open for new research is the frame construction and algorithms for instructional design and the effects of linear programming as opposed to branching.

The inconsistency in definitions for "CAI", "computer literacy" and "effectiveness of CAI" has been cited as an area that needs further attention (Sheingold, 1983). As for an acceptable definition evolving two years after Sheingold's statement, Hussain (1985) defines CAI to be "the direct use of a computer for the facilitation and certification of learning---that is, using the computer to make learning easier and more likely to occur, as well as using the computer to create a record proving that learning has occurred" (Hussain, 1985, p.17). Effectiveness can be defined once specific goals and uses are established. A goal might be the use of CAI for the raising of test scores in a defined population (i.e. Chapter 1). The cost effectiveness is another area to look at if the that is an issue for the school district.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Statement of General Goals

There were four goals for this practicum. The first goal was to help teachers be able to define what a database is and describe uses of a computer database. The second goal was to help teachers learn how to use a database. The third goal was to have the teachers use databases in their classrooms. The fourth goal was to have the students of grades 3 through 6 introduced to a database and its functions.

Specific Objectives

The following objectives were established for this practicum:

1. When evaluated with a pre and post monitoring checklist (see Appendix F and G), twelve of the 15 teachers in grades 3 through 6, remedial, and special education will be able to define the word database and describe its uses (i.e student data management, library data, classroom instruction, development of higher order thinking skills) with 75% accuracy.

2. When evaluated with a pre and post monitoring checklist (see Appendix F and G), twelve of the 15 teachers in grades 3 through 6, remedial, and special education will be able to demonstrate their abilities to create a data base, and use the various functions including: *finding*, *arranging*, *selecting*, *printing* and *copying* of information with 75% accuracy.

3. a. When evaluated with a pre and post monitoring checklist (see Appendix F and G), twelve of the 15 teachers in grades 3 through 6, remedial, and special education will demonstrate use of a database as a tool to instruction in their classroom. A sample lesson plan that contains an introduction of the concept of database, a demonstration of this concept and the application of the concept by the students objective is included in the appendices (see Appendix P).

b. When evaluated with a pre and post monitoring checklist (see Appendix F and G), twelve of the 15 teachers in grades 3 through 6, remedial, and special education will have created a database to manage student data for their classroom use. A hardcopy of

a sample database that contains categories for management of classroom or instructional information and student or teacher data is included in the appendices (see Appendix P).

4. a. When evaluated with a pre and post monitoring checklist (see Appendix H and I), 75% of the students of grades 3 through 6 will be able to give a definition of database.

b. When evaluated with a pre and post monitoring checklist, 75% of the students of grades 3 through 6 will demonstrate their knowledge of how to search for information on a database by using the *find*, *arrange* and *select* commands.

The writer chose a standard of 75% for the students' achievement of these tasks for two reasons. The first reason was that all of the special education and remedial students would be included in the evaluation. For some of the tasks it might be too difficult to expect 100% mastery within the timeframe of this practicum. The second reason was a subsidiary of the reason for setting the teachers' standards where they were set. In the writer's six years of experience in teacher training relative to the use of computers she has found that it is unrealistic to believe that every teacher would have a positive attitude toward the computer to the degree of giving an enthusiastic effort to incorporate it into the classroom.

Plans for Analyzing Results

Plans for analyzing the results of this practicum were as follows:

1. Two pre- and post -monitoring checklists designed in a true and false format were be used, one checklist for teachers and one for students. They measured an increase in the number of correct responses to the evaluation items. These items were to relate to knowledge gained from the processes applied in this practicum.

2. Lesson plans were used to document the inclusion of database use in classroom instruction.

3. A log was kept by the writer for documentation of observations during the implementation process.

4. A hardcopy of the teachers' classroom management databases was produced and used as documentation of their completion.

CHAPTER IV

SOLUTION STRATEGY

Discussion of Possible Solutions

The purchase of computers has left many school districts with the need to use this equipment effectively. A review of the literature disclosed a number of approaches a school district could take to initiate and assure the use of computers. Teacher training was the common factor in each review.

Spencer's (1986) research found the method that was most effective was to have the computers in the individual classroom and train all teachers. The style of training was an in-house turn-key approach where an expert teacher or CAI coordinator trains the classroom teachers.

The development of a comprehensive and efficient training program is essential according to Yeloushan (1986). She suggested the key components to be setting specific goals for each training session and separate hardware and software instruction with at least 45 minutes a week to review the concepts presented at the training session. She further stated that this review time should be a time when the teachers can give their undivided attention to the task.

The key components of the training have been cited to be several workshop sessions with independent follow up practice and review time (Lamberic, 1984). The workshops should be dedicated to how to work the software and review of the software contents. It was recommended that each of these topics be addressed at a separate workshop.

Another issue in the process of integrating the computer into the elementary classroom is just what kinds of applications are feasible in this setting other than canned drill and practice or tutorial type programs. Russ (1986) was quite successful in the creation and use of databases with elementary school children in social studies. He noted the development of inquiry skills, problem solving and critical thinking skills along with the acquisition of the computer skills. A matter of great importance for success in this endeavor, Russ mentions, is that the teacher must be well trained and very comfortable with a database management program.

Rooze (1986) recognized the importance of the computerized database in teaching thinking in social studies. However, he emphasized the importance and usefulness of the teacher's strategy in teaching about databases.

Description of Selected Solution

The solution to the problem of the teachers having a limited awareness and skills in current computer uses was based on various components and strategies for teacher training and awareness that were described in earlier sections of this paper. The approach chosen consisted of combining the components and strategies to provide a comprehensive training and implementation process.

The approach selected for training was utilized with the present staff. This staff of the elementary school and district described in Chapter 1 included the district CAI coordinator, a building CAI staff person, a building principal, and classroom, remedial and special education teachers.

The process began with an orientation meeting which covered an overview of the goals, objectives and calendar of activities (see Appendix J) that took place during the implementation. The pre monitoring checklist was completed at this time. The first component to be addressed was the awareness of database concept. Teachers were given instruction on what a computer database is, what its functions are and a demonstration of these functions. This overview and awareness instruction was done in two workshops. The specific items covered in all of the workshops can be found in Appendix K. The successful completion of these two workshops accomplished the first goal.

Workshops three through seven focused on the instruction of how to use the AppleWorks database. AppleWorks, the program that was used throughout the practicum, is integrated software that combines a wordprocessor, database and spreadsheet in one program. It is produced by the Clairis Company (1987). The functions to analyze data were taught. The procedures to create a database were addressed. A small database was developed by each participant to enable them to apply procedures learned. The commands and procedures for printing were also covered in this segment of workshops.

The eighth session focused specifically on the use of databases in classroom instruction. Databases that were already being used in the classroom (which were mentioned in the literature) were presented. The subject areas that would easily lend themselves to the use of a database were also discussed. A brainstorming session took place where the participants came up with some new ways to use databases.

The selection or development of a database to be used in the classroom and lesson plans to incorporate this use was the goal for workshops nine through twelve which brought the practicum into its fifth month.

The fifth, sixth, seventh and the first two weeks of the eighth month of the process were devoted to the instruction of the students in grades 3 through 6. During this time, the

writer was available each Thursday for a question and answer session. This time was used for the teachers to share their experiences and present any questions.

Meetings were held with the teachers the third and fourth week of the eighth month to prepare for student evaluations and plan for the classroom management database which was completed by each teacher. The contents of workshops 13 and 14 were covered in individual meetings during the eighth and ninth month. The activities included the development of categories/fields for the classroom management databases. Other activities during these meetings included the completion of student evaluations and the distribution of available data for use in the classroom management databases.

The original solution strategy planned for group meetings in which the contents of workshops 13 and 14 were to be covered. A major computer purchase was made by the district during the practicum implementation process. This purchase made it necessary to move the computers that were being used for the practicum as well as the location. The writer met with the participants individually and covered the contents planned in the agenda of the above mentioned workshops.

The final month of the implementation process was devoted to the completion of the classroom management databases and data input.

Report of Action Taken

The solution used in this practicum involved the teachers from one of the elementary schools in the school district where the writer is employed. This included 15 teachers of grades 3 through 6, Special Education, the Basic Skills Program and the C.A.I. staffperson.

The implementation of the solution strategy began with the writer sending an announcement of computer workshops to the above mentioned teachers. The announcement included a schedule of the days, time and location of the workshops. Copies of the announcement were sent to the building principal, the Assistant Superintendent of Curriculum and Instruction and the Administrative Assistant of Curriculum and Instruction.

The first month of the implementation included 4 workshops. The first workshop began with socialization over refreshments and conversation about computer experiences. Each participant received a blue folder which included copies of the agenda for each workshop, a calender of the workshops, activities and meetings along with a personalized note pad with the a computer graphic as a logo. The formal opening included an announcement regarding the purpose of the workshops where the goals and objectives of

the scheduled activities were stated. A copy of the calendar of activities was referred to at this time. The writer approached the process of learning the database and attending the workshops as an individual activity for each person free of competition and administrative scrutiny. The workshops were designed to have a non-threatening atmosphere and an easy pace. To achieve this tenor, the writer often shared short stories of her own dilemmas with the computer when first trying to comprehend a concept, a new device or selection of software.

The pre-monitoring checklist (Appendix F) was introduced as a method to monitor ones-self as well as to monitor the goals and objectives of the practicum only to be seen by the participant and the writer. With this information came a delightful enthusiasm from the participants in the form of chuckles and individual goals being uttered. The pre-monitoring checklist was completed during this first meeting and kept in the individual folders.

A brief introduction to the concept of a database was presented as the final activity of the first workshop. The definition was given and sample databases were presented in hardcopy (a printed copy of a document on paper) form.

The remaining workshops for the first month were instructional in nature and all were hands-on with the computer. A demonstration of three different databases was presented as the first hands-on activity. The writer had loaded the databases onto each person's computer prior to the workshop. The participants were given a command that would allow them to view the various databases and peruse their contents. This workshop was concluded with the writer "wetting the participants' whistle" for the next session by giving them the command for "*finding*" an individual's record and having them discover that their own name was in the database that they had been reviewing. Their fascination for the potential of the computer was obvious. Each teacher left the session with a data disk that housed the database the teachers were exploring and a copy of the command documentation.

The remaining workshops of the first month included instruction on how to *load* or *boot-up* and quit from the database, as well as the use and execution of the various function commands.

The second month initiated the methods to create a database. The participants were instructed on how to create their own database during the first workshop of the month, workshop #5. The instruction included the development of the *fields* and *categories* that would make up the database. The participants had been given the assignment, in the previous session, to think of a collection of information which they use regularly or would like to use regularly in an organized manner.

The print command was also introduced in the second month during workshop #7. This provided the participants with the skill necessary to print their databases.

A practice session was provided following the fourth and fifth workshops to enable the teachers to become comfortable with the newly presented information. The writer was present during these sessions to answer the questions that came up. During the first practice session, according to the writer's log (see Appendix L), three of the fifteen teachers practiced loading the existing databases from on a data disk that was distributed at the second workshop. Nine persons practiced the various functions that had been presented. The remaining three teachers explored the database beyond what they had been instructed. This group used the documentation of commands and experimented independently.

The diverse nature of the participants comfort level and skills paved the way for teamwork. Some of the teachers had begun to pair off as teams helping each other or serving as a support. The writer approved of the peer teams because of the support, confidence and motivation that the teamwork seemed to be generating.

The second scheduled practice session found all of teachers exploring the skills of creating a database and inputting data. Some of the teachers had practiced independently on their free time. It was quite obvious which teachers had practiced more often; they were more confident in their movement in the database.

Classroom uses of a database were generated and brainstormed during the first workshop of the third month, workshop #7. The teachers discussed the subjects or areas where they felt that a database could be used in instruction. At the eighth workshop, some of the participants chose to explore the use of existing databases and others chose to develop their own instructional database. By the ninth workshop the teachers had decided whether or not they were going to develop their own database or use an existing one, and the teachers had established a teammate with whom he/she would work on a classroom database. The writer accepted the team approach for creating lessons because she could see the strength and confidence that had been building as the teachers helped each other.

The team approach also made the requirements a little less demanding, considering the teachers were giving some of their personal time to the project. It was the writer's intention throughout the practicum to have the process be as undemanding as possible because of the many responsibilities and extras that had been placed on the teachers. The writer also tried to create an environment of learning that was fun yet challenging and useful. The acceptance of using teams was a deviation from the original plan that worked to everyone's advantage. The teachers were quite pleased to work together and share the data input and gathering of materials for their lessons. The writer and the practicum

benefitted in that the teachers' attitudes and morale stayed at a positive level throughout the implementation process in spite of many outside influences from district pressure.

The tenth workshop was scheduled to take place during the week before the Christmas holiday, however, it was postponed until after the Holiday at the request of the participants. This was the second deviation from the original plan.

The tenth through twelfth workshops were conducted every other week with a practice session between each. During these sessions the teachers: (1) completed their selected database; (2) planned lessons in which they could use the selected database; and (3) input data. Three different instructional databases were created during this process. One database was made up of Presidents of the United States and various facts about the Presidents. Another, created especially for Special Education students in the intermediate grades, consisted of words categorized by the vowel sounds in each. A social studies database included the students names and facts about their families ranging from dates and places of birth to colleges or employment areas of their parents.

Upon completion of the lesson plans the teachers went back to their classrooms and began to implement the instructional uses of the database. The teachers divided the 60 students among the the 15 of them and each person was responsible for some student(s) instruction (see Table 6). Each teacher followed the format of introduce, demonstrate and reinforce, for implementing the instructional uses of the database. They began by introducing the students to the database concept by giving a definition of a database and showing concrete examples such as telephone books, grade books, attendance sheets and catalogs. The second step was the presentation of the computer database. This phase was approached in various ways. Some teachers introduced this part of the lesson to the entire group of students in one seating. Others took advantage of small group instruction or one on one instruction during reading class and the third method of presentation was done by remedial teachers when they took the students from the regular classroom. The teachers demonstrated the database and its functions in the second lesson in various ways, however, all teachers chose to introduce different functions in small groups of 1 or 2 students. The teachers demonstrated one function per class session. This phase was approached in various ways. The third phase in the implementation of the database into the classroom was done by each child receiving an assignment that included the execution of the functions they had learned. During the next three months the participants met with the writer each Thursday to share experiences and present questions pertaining to this implementation process.

The third deviation from the original plans and schedule was the simultaneous work and completion of the classroom management database along with the instruction in the

classroom on databases. The amended schedule can be found in Appendix M. The contents planned for workshops # 13 and #14 as well as all other scheduled meetings were covered in the amended schedule. During this time the teachers decided the purpose for which they would use the classroom management database and planned the various categories of information to be used in the database. The experience that was gained during the creation of the lessons and instructional databases made this process quite simple. The teachers needed little or no guidance. The completed databases were submitted to the writer within two weeks after she met with each teacher to plan for the creation. The only input that was needed from the writer at this phase was of a consultation nature to help one of the teams decide between two ideas they had generated and the practicality of these ideas relative to computer availability. The classroom management databases ranged from grade tracking and discipline to homework monitoring.

Following is documentation from the writer's log relative to the above mentioned amendment to the practicum schedule: The need to amend the schedule came about because of a district-wide purchase of a Computer Managed Instruction Lab. This purchase affected the implementation process in four ways: (1) many of the computers that were being used were dismantled; (2) the central location where the workshops were being held was filled with 30 new Apple IIGs computers networked together but not yet ready for use; (3) the teachers were going to be pulled out for training on the computers and software during the time scheduled for the practicum; and (4) the teachers were required to follow-up on the new hardware and software leaving little time for group meetings.

The writer was aware, shortly after the teachers began to instruct the students on the varied uses of a database, that the purchase of new computers as well as a complete integrated package of software was definitely going to take place. Warranty, state contracting prices and liability concerns dictated the time frame and procedures for the implementation of the labs. A disruption was anticipated and planned for, but not of the magnitude that occurred. The dismantling and storage of the computers being used was arbitrarily done by a district employee.

A realistic plan was devised by the writer and teachers involved to enable the completion of all phases of the practicum, not overburden the teachers, and to share the few computers that were available at the moment. Due to the limited availability of computers and uncertainty of future availability,the participants doubled up on their plans and worked to complete their objectives. The writer met with each teacher or team individually for 15 minutes each week during their planning time to review the classroom management database they had begun to prepare. This process was scheduled to take place over a two month period in group sessions. The data was also entered during these meetings. The teachers

entered the names of the students who were presently in the grade preceding the one they were teaching in an effort to be as prepared as possible for the next school year. After six weeks this phase was successfully completed.

The teachers had a very positive attitude throughout all of the disruptions. They were able to see the value of what they had learned in the past year and were also inquisitive about the new computer system. The writer made them aware that the new computers were also in the Apple family of computers that they had been using all the while and that their new acquired skills could eventually be put to use on the new system as soon as the warranty and company training issues were addressed. The new computers, the Apple IIGS model, were networked with a Macintosh II as the fileserver along with program storage on a CD-ROM.

CHAPTER V

RESULTS, CONCLUSIONS, RECOMMENDATIONS, AND DISSEMINATION

RESULTS

The evaluation of the results of the practicum was accomplished through using two pre-and post evaluation checklists to measure the four objectives. One checklist evaluated the teachers' growth (objectives 1,2 and 3) and the other evaluated the students' work (objective 4). Fifteen staff persons were involved in the accomplishment of objectives 1, 2 and 3. Sixty students were involved in the accomplishment of objective 4. The method for recording the mastery of each item on the checklists was the notation of a true (T) or false (F) next each item. A "T" indicated the successful completion of the activity. See figure 1 and figure 2 for a breakdown of the "T" responses to each item on the pre- and post checklists that made up the four major objectives of the practicum.

The items monitored for completion in the teacher's checklist were the definition, description and creation of a database along with the execution of various command functions relative to the database (see Table 1 on the next page). The successful completion of using the database as a tool for instruction and for management was also monitored. The pre and post-checklist and results can be found in Appendices N and O. Further documentation of the successful completion of the objectives is a copy of a teacher's lesson plan and the hardcopies of the databases that were created (see Appendix P). The overall "T" responses on the teachers' pre-monitoring checklist was 2%. The overall "T", *true,* responses on the teachers' post-monitoring checklist was 99%, a difference of 97% in the percentage of participants who at the beginning of the practicum had little or no skills in the above noted items.

Figure 1

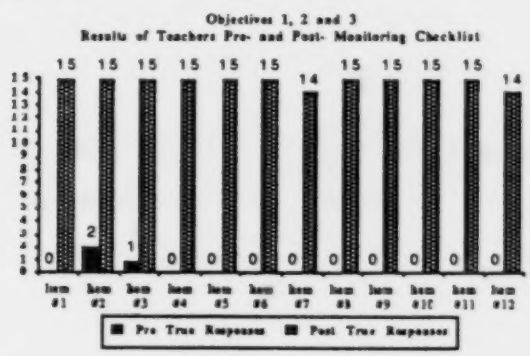

Objectives 1, 2 and 3
Results of Teachers Pre- and Post- Monitoring Checklist
15 15 15 15 15 15 14 15 15 15 15 14
0 2 1 0 0 0 0 0 0 0 0 0
Item #1 Item #2 Item #3 Item #4 Item #5 Item #6 Item #7 Item #8 Item #9 Item #10 Item #11 Item #12
Pre True Responses
Post True Responses

Figure 2

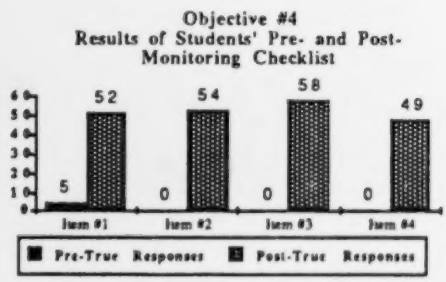

Objective #4
Results of Students' Pre- and Post-Monitoring Checklist
5 52 0 54 0 58 0 49
Item #1 Item #2 Item #3 Item #4
Pre-True Responses
Post-True Responses

Table 1
Results of the Teachers' and Student's Pre- and Post Monitoring Checklists - True Responses for All Objectives

	Pre True Responses		Post True Responses	
	Number	Percentage	Number	Percentage
Teacher responses				
The Teacher can...				
Item				
1. Define database	0	0%	15	100%
2. Describe database uses	2	13.3%	15	100%
3. Create a database	1	6.6%	15	100%
4. Execute arrange function	0	0%	15	100%
5. Execute select function	0	0%	15	100%
6. Execute copy function	0	0%	15	100%
7. Execute print function	0	0%	14	93.3%
8. Execute find function	0	0%	15	100%
9. Use database as tool	0	0%	15	100%
10. Create management DB	0	0%	15	100%
11. Provide DB use lessons	0	0%	15	100%
12. Provide hardcopy of classroom management DB	0	0%	15	100%
Student responses				
The student can...				
1. Define database	5	8%	52	86%
2. Arrange info in database	0	0%	54	90%
3. Find info in database	0	0%	58	96%
4. Select info in database	0	0%	49	81.6%

Objective 1, defining the term "database" and its uses, was measured by using the pre- and post -self-evaluation checklist (see Appendices N and O). The objective was measured by an increase in the number of responses in the T (true) categories on the post self-evaluation checklist when compared to the pre self-evaluation checklist. The bar graph, on the next page, in figure 3 shows the successful completion of this objective. Criteria were attained by all of the teachers participating in the workshops, thus meeting objective 1. Shown in figure 3 are the "T", *true*, responses to the items that address this objective on the pre- and post monitoring checklist. Table 2, on the next page, also shows the results of objective 1.

Figure 3

Pre and Post Performance on

Objective #1

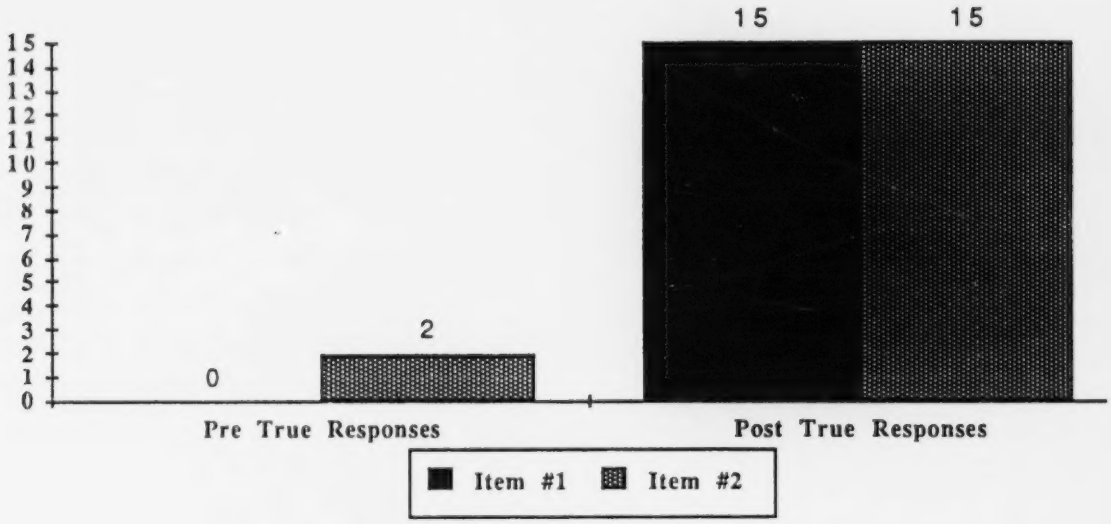


Table 2

Results of the Teachers' Pre- and Post Monitoring Checklists - True Responses for Objective #1

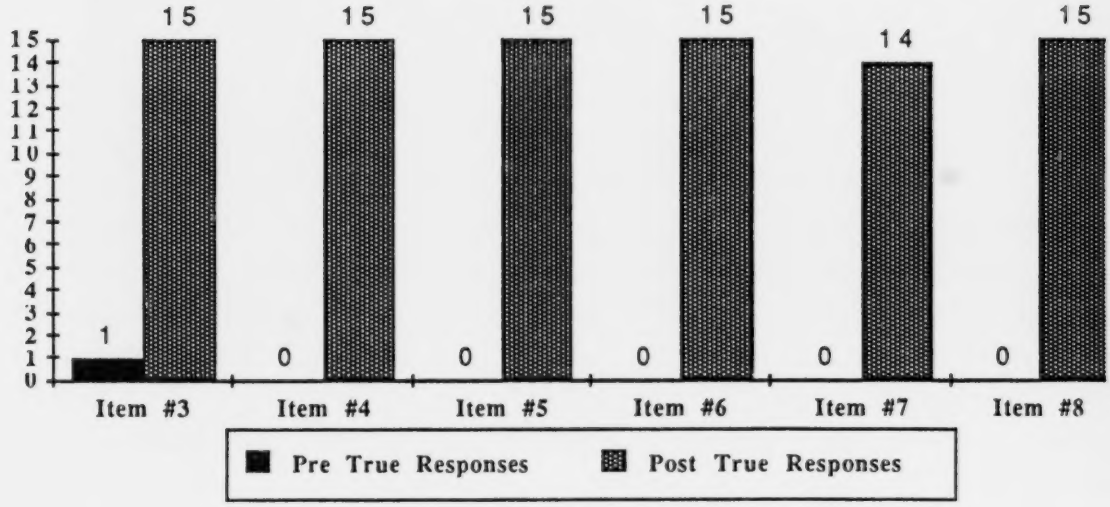
	Pre True Responses		Post True Responses	
	Number	Percentage	Number	Percentage
Teacher responses				
Item				
1. Define database	0	0%	15	100%
2. Describe database uses	2	13.3%	15	100%

The accomplishment of objective 2, the ability to create a database and use the *finding*, *arranging*, *selecting*, *printing* and *copying* functions, was addressed through the instruction at the workshops and the practice sessions. These data were collected by the writer through observations during the workshops and practice sessions. Items 3 through 8 inclusive on the post-monitoring checklist address the areas relative to the completion of objective 2, (see Appendix O). A bar graph in figure 4, on the next page, illustrates the successful completion of objective 2. The graph shows a marked improvement on all items related to objective 2. Table 3, on the next page, shows the items that make up the objective, the number of responses to each item as well as the percentage.

Figure 4

Pre and Post Post Performance on

Objective #2



A True (T) response indicates successful completion of the activity.

Table 3

Results of the Teachers' Pre- and Post Monitoring Checklists - True Responses for Objective #2

	Pre True Responses		Post True Responses	
	Number	Percentage	Number	Percentage
Teacher responses				
Item				
3. Create a database	1	6.6%	15	100%
4. Execute arrange function	0	0%	15	100%
5. Execute select function	0	0%	15	100%
6. Execute copy function	0	0%	15	100%
7. Execute print function	0	0%	14	93.3%
8. Execute find function	0	0%	15	100%

Objective 3 was achieved through meeting the standards set in objectives 3.a. and 3.b. (see Figure 5). These objectives were: 3. a.) twelve of the 15 teachers were expected to be able to demonstrate use of a database as a tool to instruction in their classroom, and 3.b.) twelve of the fifteen teachers were expected to create a student management database. The activities that led to the successful completion of these objectives were delivered via the workshop activities and independent work by the teacher.

Databases that had already been created were presented to the teachers for their exploration. A discussion was held regarding the subject areas that seemed to lend themselves easily to the database application. The teachers also brainstormed the various ways a database could be used as a tool to their instruction. Following these activities time was spent taking an in-depth look at existing databases or beginning the development of a new one for use in the participants' respective classrooms. These activities took place during workshop #8 and #9. The teachers worked with their partner or team members (3 at the most per team) on the development of the lessons. All lessons were geared to the appropriate grade levels. The teamwork resulted in a setting that was casual and did not overburden the teachers with extra requirements. The writers' entire intent in the presentation of computer applications was to have the computer serve the needs of the person in a time and task efficient manner, not to have the person serve the needs of the computer. The teachers had recently experienced a rash of changes and last minute requirements that placed much stress on them and their work environment, thus the extra sensitivity to their responsibilities.

The teamwork proved to be effective and met the expectations set by the writer. The results of the post-evaluation checklist indicated this by all of the 15 participants receiving a "T" (true) to the applications of the database in the classroom lessons and to the development of a classroom management database (items # 9, 10, 11 and 12 on the monitoring checklist). It was through these two activities that the criteria were met for objective #3. Appendix O shows the results of the post monitoring checklist and Appendix P contains the the sample lesson plan and the hardcopy of three management databases. Figure 5, a bar graph, shows the "T", *true*, responses to the items on the pre- and post-monitoring checklist relative to objective 3. Table 4, on the next page, shows the items that make up the objective, the number of responses to each item as well as the percentage.

Figure 5

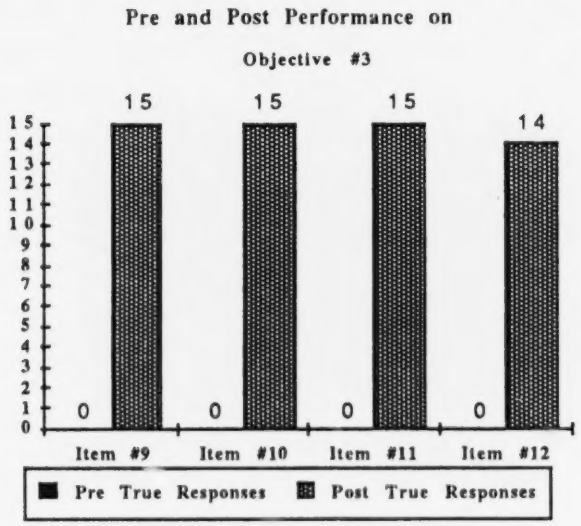


Table 4

Results of the Teachers' Pre- and Post Monitoring Checklists - True Responses for Objective #3

	Pre True Responses		Post True Responses	
	Number	Percentage	Number	Percentage
Teacher responses				
Item				
9. Use database as tool	0	0%	15	100%
10. Create management DB	0	0%	15	100%
11. Provide DB use lessons	0	0%	15	100%
12. Provide hardcopy of classroom management DB	0	0%	15	100%

The fourth goal was to have the students introduced to a database and its functions. The pre monitoring checklist was completed by the teacher for his/her class at the beginning of the fifth month of the implementation. Due to the expedient manner in which the teachers accomplished the basic database creation process they were able to begin student instruction earlier than the writer had anticipated. By the end of the fifth month of implementation, all teachers had begun student instruction. The first part of the fourth goal, 4.a. which required the students to be able to define a database was met in a more expedient manner than 4.b. which required the students to execute the function of the database. Although each segment was met with 80% accuracy, the students grasped the idea and definition of a database (4.a) within a week but 4.b. took a period of weeks

for the students to learn and execute these functions. During the pre-monitoring, none of the students were able to execute search functions, however, five of the students (8%) were able to give a definition of a database (see Appendix Q). After instruction and hands-on activities with the computer over a three month period of two 15 minute small group lessons per week the objectives 4. a. and 4. b. were met with 80% accuracy, thus meeting the fourth and final objective of the practicum (see Appendix R, Table 5 and Figure 6). The mean of student performance on the four items was 88.5%. Figure 6, below, shows the number of "T", *true,* marks received for the items that made up this objective on the pre- and post student monitoring checklist. Item #1 addressed 4.a., defining a database and items #2, 3, & 4 addressed 4.b, executing command functions. Table 5 also shows the responses to the monitoring checklists. Table 6, on the next page, shows the number of students who were assigned to each teacher for the database instruction.

Figure 6

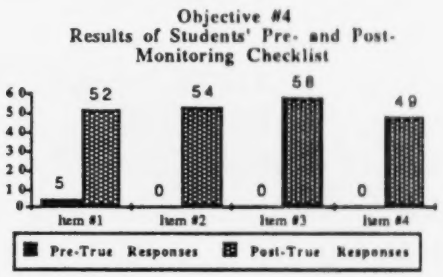


Table 5

Results of the Student's Pre- and Post Monitoring Checklists - True Responses for Objective #4

	Pre True Responses		Post True Responses	
	Number	Percentage	Number	Percentage
Student responses				
Item				
1. Define database	5	8%	52	86%
2. Arrange info in database	0	0%	54	90%
3. Find info in database	0	0%	58	96%
4. Select info in database	0	0%	49	81.6%

Table 6

Number of Students Assigned to Each Teacher

	Number of Students
Teacher #1	09
Teacher #2	07
Teacher #3	06
Teacher #4	03
Teacher #5	02
Teacher #6	09
Teacher #7	03
Teacher #8	02
Teacher #9	03
Teacher #10	07
Teacher #11	02
Teacher #12	02
Teacher #13	02
Teacher #14	02
Teacher #15	01

A Post Implementation Survey was conducted at the conclusion of the implementation process. The purpose of this survey was to ascertain the teachers' feelings regarding the value of the training and information they received. The survey and its detailed results can be found in Appendix S. All of the teachers, 100%, responded in the positive to all 6 items on the survey indicating that the information they received was broadened their knowledge, the information was valuable to teaching and they would like additional training programs. Table 7, on the next page, reflects the percentage of responses to each alternative on the survey. In 3 of the 7 items a response of all of the participants responded in the "very accurate" category. The remaining categories had the majority of the responses also in the "very accurate" category, with 3 of the items having 86.6% in this column. The teachers (13.3%) who responded to item 7 with a response of "somewhat accurate" informally stated that they were hesitant to encourage fellow teachers to take on the task of learning the database unless their fellow teachers were guaranteed a thorough paced training similar to what they had received.

Table 7

Post Implementation Survey Results by Percent

	very accurate statement	*accurate statement*	*somewhat accurate*	*inaccurate*
1.The training I received broadened my usage of the computer.	100%	0%	0%	0%
2.Without the training, I would not have been aware of the new approaches to the use of computers in the classroom.	86.6%	6.6%	6.6%	0%
3.The new uses that I have learned for the computer have enhanced my instruction in the area of higher order thinking skills.	86.6%	6.6%	6.6%	0%
4.The time I dedicated to the training and implementation, in my professional opinion, was very valuable.	100%	0%	0%	0%
5.I would like to have more awareness and training programs such as this.	100%	0%	0%	0%
6.I will be using the skills that were gained in this training in my classroom on a regular basis.	86.6%	6.6%	6.6%	0%
7.I will encourage others to learn/ use a database and the methods I have learned.	66%	20%	13.3%	0%

As previously noted, a log was kept by the writer throughout the entire practicum implementation (see Appendix L). Following is a summary of entries in that log beyond those in appendix L that further illuminates the responses of the participants.

The participants welcomed the workshops and the opportunity to have a specific time set aside for the instruction and follow-up practice on the computer. As various levels of competency began to appear the writer encouraged teamwork. The persons with a stronger grasp or more comfortable approach to the concepts were teamed with persons that were struggling. This grouping enabled the writer to cover the planned materials for each session much more efficiently. This grouping process began after the third workshop.

By the end of the sixth workshop, the teachers reached a level of confidence which was seen by each individual getting quite engrossed in his/her experience. Often times the situation occurred where each person had ventured on to another aspect of the program but became stumped and was unable to escape from the problem thus requiring the undivided attention of the writer. The writer did not want to stifle this creativity and confidence to

explore. Exploration such as this evidenced the fact that computer phobia was not present. To enable a more individual approach to the workshops the writer divided the group in half and conducted double sessions of workshops. Seven teachers attended the early session and eight attended the late session. Varied teachers schedules made for ease in scheduling two sessions.

Conclusions

The first objective addressed the participants' demonstration of their understanding of a database and its uses. It was quite obvious that this objective was met by the end of the third workshop. The participants were given enough instructional time as well as monitored practice time to establish an understanding of the concept. The goals for each workshop were designed to require as little material as possible to be remembered at a given seating. The workshops were also designed so the participants could achieve mastery of the presented skill by the end of most workshops. The more complicated skills were scheduled to allow practice time between sessions.

The results that evolved from the above mentioned approach support Wilkinson's (1983) finding that teachers accept and are confident in the use of computers when thorough, well paced training is presented.

The second and third objectives were met as the teachers practiced and explored the database during formal workshop sessions, scheduled practice sessions and independent work on the computer. Olson (1986) found that by having access to the computer and time to become comfortable with the computer, the teachers became clearer on the issue of computers as a separate subject and began to see them as a tool to instruction. Several writers (e.g., Olson, 1986; Yeloushan, 1986; Naiman, 1982 and Hunter, 1980) suggested that the availability of support personnel was a common factor in successful training and integration of computers in the classroom. The practicum was designed for teachers who did not have adequate time or confidence to explore more sophisticated uses of the computer. Thus, the built in workshops and practice time were conducted during school hours the majority of the time.

The fourth objective addressing the students learning how to use the database was successfully achieved with much enthusiasm and fascination by the students. They appreciated the speed and capabilities of the computer as it managed the information. Each of the 15 classes was given instruction on what a database is and the function it serves via a demonstration by their teacher. Some teachers instructed in small groups or one on one during the last 10 minutes of the reading class while others instructed the total group all at

one time. Each child was given the opportunity to find his/her name on the database by using the *find* command. An explanation of various uses were discussed. The remaining lessons addressed the execution of commands. Following the lessons, each student was assigned to the computer during independent work time to execute various commands. The execution of the commands enabled the students to retrieve information that the teacher had requested on the student's assignment sheet.

The writer found Miller's (1987) findings to be the same as hers relative to administrative support. The task of successfully and smoothly integrating the computer is not achieved by teacher participation only. Miller found that the support of key administrators during teacher training facilitated positive attitudes toward the the task of integrating the computers in the classroom. She further stated that these various support personnel also contributed to a broader knowledge base of how the computer can be used. The writer observed an increase in motivation level of the students and teachers when the principal of the building showed interest in the use of the database. The principal discussed, with the teachers and the students, ways that she planned to use the database in her work as well as various applications for the classroom. She further expressed her desire for each classroom to have as many computers as they felt necessary to carry out their projected plans with the database and informed the teachers that she welcomed purchase requests relative to their needs.

In conclusion, this practicum project clearly indicates that thorough teacher training does broaden the uses of the computer. The writer is extremely pleased with the results of the practicum. The commitment and progress made during the implementation served as documentation that the teachers of the district were prepared to expand the uses of the computer. The proof was in the district-wide 2 million dollar investment in computers and courseware that was made during the last two months of the process.

Recommendations

The writer has four recommendations regarding computer applications in a school system. First, the use of computers should be supported by the building principal and central administrative staff, including the chief school administrator.

Secondly, the support of the building principal and central administrative staff should be in the form of willingness to commit a lot time for training and daily maintenance of the program. Without the principal's encouragement and support of the teachers in this endeavor, the training and computer use would have been quite difficult. This commitment to ongoing training and technology updates is a must because the technological

advancements are occurring every day. Educators must be aware of these advancements as they apply them to the students and their daily lives. Without this awareness the influx of computers and training is not as meaningful to the teachers.

The third recommendation is that all teachers should have an opportunity to have input to the selection and requisitioning of new software for the curriculum and any computer applications. The computer is a tool for instruction and daily living. The persons using this tool should have input into: (1) how the tool will be applied: (2) to what the tool can be best applied: and (3) the necessary materials and software utilizing the technology.

The final recommendation is something that the writer would like to share with fellow educators, trainers and users of technology. The computer is designed to be a tool. A tool helps one work and makes the work less tedious than it would be without the tool. Design all utilization carefully and select software and hardware carefully, keeping the following rule in mind: THE COMPUTER SHOULD WORK FOR YOU. YOU SHOULD NOT BE WORKING FOR THE COMPUTER. These recommendations come from the writer's experience during this practicum, her studies while in the Nova program and as a computer coordinator for 7 years.

Dissemination

The results of this practicum project were shared with four different groups. The first presentation was to a group of the district's CAI staff persons. A discussion was held regarding the content of the practicum and the text was reviewed by the CAI staffpersons upon its completion.

A copy was also shared with three different organized groups of educators in the field of computers throughout the writer's state and in other states as well. One group was educators who are responsible for implementing computer use into their school districts and all used similar hardware. The other two groups were persons attending conferences that addressed technology on some level. These groups are representative of administrators, public elementary and highschool teachers, college professors and department of education employees.

REFERENCES

Amarel, M., & Swinton, S. (1976). Influences of teachers' conceptions on curriculum implementation in a CAI project. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA.

Callison, W. L. (1985). Using computers in the classroom. New Jersey: Prentice Hall

Chambers, J. A., & Sprecher, J. W. (1982). Computer assisted instruction: Its uses in the classroom. New Jersey: Prentice Hall

Claris Corporation. (1987) AppleWorks Manual. California

Computer-using educators adopt ICCE code of ethical conduct. (1988). Education Computer News, p. 70.

Cory, S. (1983). A 4-stage model of development for full implementation of computers for instruction in a school system. The Computing Teacher, 11, (4), (11-16).

Fisher, G. (1983). Where is CAI effective: A summary of the research. Electronic Learning, 11/12, (82-84).

Grady, M. T. (1983). Issues and implications. In M.T. Grady & J. D. Gawronski Eds.), Computers in curriculum and instruction, (pp. 160-163)] Association for Supervision and Curriculum Development

Hannah, L. (1987). Teaching data base search strategies. The Computing Teacher, 14, (9), (16-20, 22-23).

Hassett, J. (1984). Computers in the classroom. Psychology Today, 18, (9), 22-28.

Hunter, B. (1980). An approach to integrating computer literacy into the k-8 curriculum. Washington, DC: National Science Foundation. (ERIC Document Reproduction Service No. ED 195 247)

Hussian, D. & Hussian, K.M. (1985) Information Processing Systems for Management. Illinois: Richard D. Irwin, Inc.

Jamison, D., Suppes, P. & Wells, S. (1974). Effectiveness of alternative instructional media. Review of Educational Research, 44, (1-67)

Lamberic, T. (1984). Classroom computers serve 3 major functions. Educational Tid-Bytes, 1, 2-4

Miller, D. (1987). Campus-wide faculty development: A part of development; education. Journal of Developmental & Remedial Education, 6, (16-28)

Naiman, A. (1982) Microcomputers in education: An introduction. Cambridge, MA: Technical Education Research Center,Inc.

Niemiec, R., & Walberg, H. J. (1987). Comparative effects of computer-assisted instruction: A synthesis of reviews. Journal of Educational Computing Research, 3, (1), 19-34.

Olson, J. K. (1986). Computers in Canadian schools: Curriculum questions from classroom practice. (Report No. 012-182). San Francisco, CA: American Educational Research Association. (ERIC Document Reproduction Services No. ED 271 105)

Ottinger, A. B. (1969). Run computer run:The mythology of educational innovation. New York: Collier

Rooze, G. (1986) Strategies for teaching students to process information using databases Paper presented at Annual Meeting of the National Council for Social Studies (66th, New York, NY) (ERIC Document Reproduction Services No. ED 275 617)

Russ, M. (1986) Creating and using databases in the Social Studies (ERIC Document Reproduction Services No. ED 271 357)

Sheingold, K., Khanne, J. H., & Endreweit, M. E. (1983). Microcomputer use in schools: Developing a research agenda. Harvard Educational Review 53, (4), 412-432.

Spencer, C. (1986). The impact on today's children. Personal Computing, 10, (10), 153-157

The NETWORK, Inc. (1982). Equity issues in the use of computers in schools Andover, MA: Rose, R.

Wilkinson, A. C. (Ed.). (1983). Classroom Computers and cognitive sciences. New York: Academic Press

Yeloushan, K. (1986). Yes, computers in the classroom. Columbus, OH: Annual Computer Fair. (ERIC Document Reproduction Service No. ED 227 353)

APPENDIX A
FACULTY SURVEY

Appendix A
Faculty Survey

Your teaching grade level(s) _____

DIRECTIONS: Circle your response for each of the following statements.

4 = This a very accurate statement.
3 = This is an accurate statement.
2 = This statement is somewhat accurate.
1 = This statement is inaccurate.

I am confident with the procedures for working computer?
4 3 2 1

I am familiar with the software that is in my building and its content?
4 3 2 1

I use the computer in my classroom for CAI
__ a. everyday
__ b. 2-4 days/week
__ c. 1-2 days/week
__ d. 3 days/month or less

If your response was less than two days/week please indicate the reason(s) why by checking the appropriate response(s).

__ a. schedule of distribution was not cohesive with my instructional schedule

__ b. couldn't fit software content into lesson plans

__ c. not enough software

__ d. not enough computers

__ e. Other (please explain)

_____

I am familiar with the concept of a computer database.

4 3 2 1

I know how to use a computer database.

4 3 2 1

I have a working knowledge of how a computer database can be applied to my classroom.
4 3 2 1

I feel my students are proficient in the use of the CAI software.
4 3 2 1

Please note any concerns, activities or software that you would like to have considered relative to your use and student use of the computer.

APPENDIX B
CAI STAFFPERSON SURVEY

Appendix B
CAI Staffperson Survey

Building Name _____

1. As the CAI Staffperson in my building I feel adequately prepared to inservice the staff on the software in my building.

Strongly agree ___
Agree ___
Disagree ___
Strongly disagree ___

2. Please indicate the approximate number of hours per day that you spend on tasks relating to your responsibility as CAI Staffperson.

_____

3. The majority of the time I spend, relative to my position as CAI Staffperson is in the area...
[Please rate the activity from the most amount of time spent to the least using a 5 for the most time spent and a 1 for the least.]

Software circulation ___
Fielding hardware questions ___
Fielding software questions ___
Inservice training ___
Other [Please specify] ___

_____

_____

4. Please indicate the approximate number of hours per day that you spend on tasks relating to your responsibility as CAI Staffperson.

_____

5. I fulfill my responsibilities as CAI Staffperson
[Please check the appropriate response(s)]

From 8:30 - 9:00 ___
From 3:00 - 3:30 ___
During my lunch break ___
Other (please specify) ___

_____

_____

6. I would benefit from a workshop or series of workshopsin the area(s) of
[Please check the appropriate item(s)]

Refresher on how to use the computer ___
Refresher on the uses of available software ___
Introduction to new software ___
How to run a wordprocessing program ___
Applications of a wordprocessor ___
How to run a database program ___
Applications of a database program ___
Other [Please specify] ___

_____

_____

7. The most productive time for me to attend this type of workshop would be _____.

8. The teaching staff in my building would benefit from a workshop or series of workshops in the area(s) of
[Please check the appropriate item(s)]

Refresher on how to use the computer ___
Refresher on the uses of available software ___
Introduction to new software ___
How to run a wordprocessing program ___
Applications of a wordprocessor ___
How to run a database program ___
Applications of a database program ___
Other [Please specify] ___

_____

9. In my experiences as a workshop instructor I have found the most productive time for holding this type of workshop to be _____.

10. The majority of the teachers in my building areinterested in learning about computers and using them as a tool to their classroom instruction.

Strongly agree ___
Agree ___
Disagree ___
Strongly disagree ___

APPENDIX C
FACULTY SURVEY
RESULTS

Appendix C
Faculty Survey
Results

DIRECTIONS: Circle your response for each of the following statements.

4 = This a very accurate statement.
3 = This is an accurate statement.
2 = This statement is somewhat accurate.
1 = This statement is inaccurate.

1. I am confident with the procedures for working computer?
   4 - (35) 3 - (0) 2 - (0) 1 - (0)

2. I am familiar with the software that is in my building and its content?
   4 - (30) 3 - (3) 2 - (2) 1 - (0)

3. I use the computer in my classroom for CAI
   (29) a. everyday
   (6) b. 2-4 days/week
   (0) c. 1-2 days/week
   (0) d. 3 days/month or less

4. If your response was less than two days/week please indicate the reason(s) why by checking the appropriate response(s).

__ a. schedule of distribution was not cohesive with my instructional schedule

__ b. couldn't fit software content into lesson plans

__ c. not enough software

__ d. not enough computers

__ e. Other (please explain)

_____

5. I am familiar with the concept of a computer database.

   4 - (0) 3 - (0) 2 - (3) 1 - (32)

6. I know how to use a computer database.

   4 - (0) 3 - (0) 2 - (2) 1 - (33)

7. I have a working knowledge of how a computer database can be applied to my classroom.
   4 - (0) 3 - (1) 2 - (2) 1 - (32)

8. I feel my students are proficient in the use of the CAI software.
   4 - (27) 3 - (7) 2 - (1) 1 - (0)

9. Please note any concerns, activities or software that you would like to have considered relative to your use and student use of the computer.

(22) Requests for workshops on storing student data
(15) Requests for new software
(29) Wanted to learn new that can be done with the computer

APPENDIX D
CAI STAFFPERSON SURVEY
RESULTS

Appendix D
CAI Staffperson Survey
Results

* Results of items #1, 2, 3, 4, 5, 7,& 9 are not reported due to their irrelevance to the problem being addressed in this practicum.

Building Name _____

6. I would benefit from a workshop or series of workshops in the area(s) of

[Please check the appropriate item(s)]

Refresher on how to use the computer ___(0)
Refresher on the uses of available software ___(0)
Introduction to new software ___(0)
How to run a wordprocessing program ___(5)
Applications of a wordprocessor ___(5)
How to run a database program ___(10)
Applications of a database program ___(10)
Other [Please specify] ___(0)

_____

8. The teaching staff in my building would benefit from a workshop or series of workshops in the area(s) of

[Please check the appropriate item(s)]

Refresher on how to use the computer ___(0)
Refresher on the uses of available software ___(0)
Introduction to new software ___(1)
How to run a wordprocessing program ___(6)
Applications of a wordprocessor ___(6)
How to run a database program ___(10)
Applications of a database program ___(10)
Other [Please specify] ___(0)

_____

10. The majority of the teachers in my building are interested in learning about computers and using them as a tool to their classroom instruction.

Strongly agree ___(8)
Agree ___(2)
Disagree ___
Strongly disagree ___

Appendix E
Sample of District News Article

The second grade students in the basic skills program have been improving their math skills using the software program Math Blaster. When the program started, scores around 300 were recorded by the computer. In the final round of the tournament, the winner was Christina with a score of 3,640 and coming in second was Jeremy , with a score of 3,130. Congratulations Christina and Jeremy.

The Resource Room students have been learning new vocabulary through the use of crossword puzzles on the computer utilizing Crossword Magic. The new words for their reading lesson are typed in with their meaning and the computer arranges them in a crossword puzzle. Students have had fun trying to stump each other while becoming familiar with their new vocabulary words. Today's puzzle was composed by Mercedes and DioJuan .

3/11/88

Computer Talents Displayed

In honor of Special Education week, May 8-14, 1988, the Resource Room students at Chelsea Heights School displayed their computer talents. Each student contributed to the bulletin board by "printing" some of his/her favorite software. Some examples of the software used included The Print Shop, The Print Shop Companion, Car Builder, Crossword Magic, Stickybear Drawing, Walt Disney Comic Strip Marker, Create with Garfield, Paint with Words, Facemaker, Mousepaint and Walt Disney Card & Party Shop. These Resource Room students showed that they truly are—"Computer Whizzes."

APPENDIX F
TEACHER
PRE MONITORING CHECKLIST

Appendix F
Teacher
Pre Monitoring Checklist

Participant # ____
Teaching grade level(s) _____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The participant ('s)...

T F 1. can define the term database. (1)

T F 2. can describe database uses. (2)

T F 3. can create a database. (2)

T F 4. can execute the arrange function. (2)

T F 5. can execute the select function. (2)

T F 6. can execute the copy function. (2)

T F 7. can execute the print function . (2)

T F 8. can execute the find function. (2)

T F 9. can use the database as a tool to instruction in the classroom. [see attached for criteria] (3)

T F 10. can create a classroom management database.[see attached for criteria] (2)

T F 11. provided a lesson plan reflecting the use of a database as a tool to instruction. (3)

T F 12. provided a hardcopy of a classroom management database. (3)

Appendix G
Teacher
Post Monitoring Checklist

Participant # ____
Teaching grade level(s) _____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The participant ('s)...

T F 1. can define the term database. (1)

T F 2. can describe database uses. (2)

T F 3. can create a database. (2)

T F 4. can execute the arrange function. (2)

T F 5. can execute the select function. (2)

T F 6. can execute the copy function. (2)

T F 7. can execute the print function . (2)

T F 8. can execute the find function. (2)

T F 9. can use the database as a tool to instruction in the classroom. [see attached for criteria] (3)

T F 10. can create a classroom management database.[see attached for criteria] (2)

T F 11. provided a lesson plan reflecting the use of a database as a tool to instruction. (3)

T F 12. provided a hardcopy of a classroom management database. (3)

APPENDIX H
STUDENT
PRE MONITORING CHECKLIST

Appendix H
Student
Pre Monitoring Checklist

Student # ____
Grade ____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The student...

T F 1. knows the definition of a database. [see attached for criteria] (4)

T F 2. arranges information in a database. (4)

T F 3. finds information in a database. (4)

T F 4. selects information in a database. (4)

Criteria for Defining a Database
Student Checklist

The elements of the students' definition would include the following to be considered an accurate definition of a database.

- data is information that is put in the computer
- a database is a place where information is stored
- with a computer database information can be found easily and quickly
- with a computer database information can be moved around and put with other information that is similar

APPENDIX I
STUDENT
POST MONITORING CHECKLIST

Appendix I
Student
Post Monitoring Checklist

Student # ____
Grade ____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The student...

T F 1. knows the definition of a database. (4)

T F 2. knows how to arrange information in a database. (4)

T F 3. knows how to find information in a database. (4)

T F 4. knows how to select information in a database. (4)

APPENDIX J
CALENDAR OF ACTIVITIES

Appendix J
Calendar of Activities

Month #1
Thursday, Month #1 week 1 - Workshop # 1
Thursday, Month #1 week 2 - Workshop # 2
Thursday, Month #1 week 3 - Workshop # 3
Thursday, Month #1 week 4 - Workshop # 4

Month #2
Thursday, Month #, week 1 - Practice Session
Wednesday, Month #2, week 2 - Workshop # 5
Thursday, Month #2, week 3 - Practice Session
Wednesday, Month #2, week 4 - Workshop # 6

Month #3
Thursday, Month #3, week 1 - Workshop # 7
Thursday, Month #3, week 2 - Workshop # 8
Thursday, Month #3, week 3 - Workshop # 9
Thursday, Month #3, week 4 - Workshop # 10

Month #4
Thursday, Month #4, week 1 - Practice Session
Thursday, Month #4, week 2 - Workshop # 11
Thursday, Month #4, week 3 - Practice Session
Thursday, Month #4, week 4 - Workshop # 12
Month #5, Month #6 & Month #7
Every Thursday - Question and Answer Session

Month #8
Thursday, Month #8 - Meeting/Prepare for Student Evaluation
Thursday, Month #8 - Meeting Plan for Management Database
Month #9
Thursday, Month #9, week 1 - Workshop # 13
Thursday, Month #9, week 2 - Workshop # 14
Thursday, Month #9, week 3 - Meeting/Submit Student Evaluation Data
Thursday, Month #9, week 4 - Meeting/ Distribute Data for Classroom Management Database

Month #10
Thursday, Month 10 - Completed Classroom Management Database is Due

APPENDIX K
AGENDA FOR WORKSHOPS

Appendix K
Agenda
Workshop #1

1. Why we are here !! Orientation
2. Calendar of Activities
3. Pre Monitoring Checklist
4. What is a DATABASE?
5. Questions or Concerns

Agenda
Workshop #2

1. Review of what a database is.
2. Demonstration of Computer Databases using the AppleWorks Program
   - Names, Addresses & Telephone Numbers
   - Classroom Management
   - Animals
3. Questions or Concerns

Agenda
Workshop #3

1. "Loading" or "booting-up" of a multi disk program.
   - AppleWorks Program 2 disks
     1) start-up
     2) program disk
   - Data disk
2. Introduction of the function of the tab key
3. Introduction of the "Find" command/function
4. Questions or Concerns

Agenda
Workshop #4

1. Review of "Loading" or "Booting-up" the program.
2. Review of the "Find" command/function
3. Introduction of the "arrange" command/function
4. Introduction of the "selecting" or "record selection rules"
5. Questions or Concerns

Agenda
Workshop #5

1. Introduction of "How to Create a Database".
2. Categories/Fields/Records
3. Questions or Concerns

Agenda
Workshop #6

1. Data input
2. Introduction to "print" command/function
3. Questions or Concerns

Agenda
Workshop #7

1. Continue with the printing process.
2. Thoughts for Classroom Use
3. Questions or Concerns

Agenda
Workshop #8

1. Discussion of databases presently being used in the classroom. Distribute Literature (Russ, Rooze, Hannah)
2. Discussion of subject areas which lend themselves to database use.
3. Brainstorming
4. Questions or Concerns

Agenda
Workshop #9

1. Develop a database or explore in depth an existing one.
2. Questions or Concerns

Agenda
Workshop #10, 11 & 12

1. Begin planning lessons or continuing data input.
2. Questions or Concerns

Agenda
Workshop #13

1. Discuss possible uses of a "Classroom Management Database"
2. Develop categories/fields for "Classroom Management Database"
3. Questions or Concerns.

Agenda
Workshop #14

1. Complete the framework for Classroom Management Database
2. Due Date for Completed Database
3. Questions or Concerns

Happy Summer !!!!!

APPENDIX L
WRITER'S LOG

Appendix L
Writer's Log

Workshop #1
Participants enthusiastic
Comfort level with the computer diverse.
Enjoyed refreshments, will repeat with each session.
Finished exactly at 4:00- participants appreciative

Workshop #2
Enthusiasm still high
Successful with remembering what was covered in first session
Fascinated by what the database is able to do
Finished exactly at 4:00 - participants appreciative two stayed longer to explore

Workshop #3
request to postpone due to Holiday activities - postponed until 1/4- very much appreciated by all participants
A little confusion about using the three disks
Enjoyed the function of the find command
Suggested its use with parts of words as a language lesson.

Workshop #4
Enjoyed the commands, comments of ease in retrieving info and useful in class as well as at home
Slight difficulty with select only because some participants wanted to get extremely complicated with their commands - participants had to wait (got a little inpatient and frustrated) for the writer to answer their questions because they all had great, indepth questions that took time to explain - possible need to make number of participants/workshop smaller

Workshop #5
Instruction and comprehension went great -some people created two mini databases within the time period of the session - need to review Apple-I command for inserting records

Practice Session - following the fourth and fifth workshops
-participants very enthusiastic and explorative
-to enable the teachers to become comfortable with the newly presented information. --- writer present during sessions to answer the questions that came up.
-first practice session
-three of the fifteen teachers practiced loading the existing databases from on a data disk -
--nine persons practiced the various functions that were presented
- three teachers explored the database beyond what they had been instructed - using the documentation of commands and experimented independently.

Workshop #6
Team approach is a definite plus, can see participants branching out and working at their own levels with no obvious frustration

Workshop #7
team 2 difficulty in seeing initial uses in classroom team 1 shared their idea and team 2 can up with two methods for use

discussion of new computer purchase, its effects on the present project, the classrooms, the present instructional schedule and the future schedules

Workshop #8
good session

Workshop #9
intense work - little need for guidance except for team 2 -not so sure the need is in skill practice or lack of understanding but in effort.

Meeting to discuss
-need to amend the schedule
- future availability of computers
the participants decided to doubled up on their plans and worked to complete their objectives
-writer suggested to meet with each teacher or team individually for 15 minutes each week during their planning time to review the classroom management database they had begun to prepare- over a two month period in group sessions - data would be entered during these meetings

Planning meetings
teachers have positive attitude
questions regarding value of what is being learned and its application to/with new computers addressed and understood by teachers

APPENDIX M
AMENDED CALENDAR OF ACTIVITIES

Appendix M
Amended Calendar of Activities

Month #1
Thursday, Month #1, week 1 - Workshop # 1
Thursday, Month #1, week 2 - Workshop # 2
Thursday, Month #1, week 3 - Workshop # 3
Thursday, Month #1, week 4 - Workshop # 4

Month #2
Thursday, Month #, week 1 - Practice Session
Wednesday, Month #2, week 2 - Workshop # 5
Thursday, Month #2, week 3 - Practice Session
Wednesday, Month #2, week 4 - Workshop # 6

Month #3
Thursday, Month #3, week 1 - Workshop # 7
Thursday, Month #3, week 2 - Workshop # 8
Thursday, Month #3, week 3 - Workshop # 9
Thursday, Month #3, week 4 - Workshop # 10 postponed until 1/4 due to Holiday Activities

Month #5
Wednesday, Month #5, week 4, Workshop #10
Thursday, Month #5, week 1- Practice Session
Thursday, Month #5, week 2 - Workshop # 11
Thursday, Month #5, week 3 - Practice Session
Thursday, Month #5, week 4 - Workshop # 12

Month #6, Month #7, Month #8
Every Thursday - Question and Answer Session

Month #8
Thursday, Month #8 - Meeting/Prepare for Student Evaluation *(held on May 1 due to possibility of computer availability problems)*

Thursday, Month #8 - Meeting Plan for Management Database *(held individually during the month of April and the first two weeks in May)*
Month #10, week, 1989
Thursday, Month #9, week 1 - Workshop # 13 *(held individually during the month of April and the first two weeks in May)*
Thursday, Month #9, week 2 - Workshop # 14 (*held individually during the month of April and the first two weeks in May)*
Thursday, Month #9, week 3 - Meeting/Submit Student Evaluation Data
(held Month #10, week 1 due to the lack of availability of computers)
Thursday, Month #9, week 4 - Meeting/ Distribute Data for Classroom Management Database (*projected promotion data was provided by each teacher of the preceding class)and used during the individual meetings in April and May)*

Moth #10
Thursday, Month #10- Completed Classroom Management Database is Due

APPENDIX N
RESULTS OF TEACHER PRE MONITORING CHECKLIST

Appendix N
Results of
Teacher
Pre Monitoring Checklist

Participant # ____
Teaching grade level(s) _____

Directions to participants. The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in parentheses, at the end of each item, indicates the goal that it is addressing.

The participant ('s)...

The numbers in brackets {} shows the number of T or F responses to that particular item.

T{0} F{15} 1. can define the term database. (1)

T{2} F{13} 2. can describe database uses. (2)

T{1} F{14} 3. can create a database. (2)

T{0} F{15} 4. can execute the arrange function. (2)

T{0} F{15} 5. can execute the select function. (2)

T{0} F{15} 6. can execute the copy function. (2)

T{0} F{15} 7. can execute the print function . (2)

T{0} F{15} 8. can execute the find function. (2)

T{0} F{15} 9. can use the database as a tool to instruction in the classroom. [see below for criteria] (3)

T{0} F{15} 10. can create a classroom management database.[see below for criteria] {2)

T {0} F {15} 11. provided a lesson plan reflecting the use of a database as a tool to instruction. (3)

T {0} F{15} 12. provided a hardcopy of a classroom management database. (3)

Criteria for Meeting Item # 9 & 10 of the Monitoring Checklist for Teachers

Criteria: Item 9

- a lesson plan exists with an introduction to a theme
- inquiry is prompted relating to information on this theme
- the database is used to sort, arrange and select information to bring about answers to questions posed during inquiry

Criteria: Item 10

- a database including fields, records and data pertinent to a classroom activity will be developed.
- teachers will, (1) describe their plans for using this database, (2) describe how it will be more efficient than their present method, or (3) describe how its use will enable them to carry out a task that would otherwise be extremely difficult or time consuming.

APPENDIX O
RESULTS OF TEACHER POST MONITORING CHECKLIST

Appendix O
Results of Teacher
Post Monitoring Checklist

Participant # ____
Teaching grade level(s) _____

Directions to participants. The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in parentheses, at the end of each item, indicates the goal that it is addressing.

The participant ('s)...

The numbers in brackets {} shows the number of T or F responses to that particular item.

T{15} F{0} 1. can define the term database. (1)

T{15} F{0} 2. can describe database uses. (2)

T{15} F{0} 3. can create a database. (2)

T{15} F{0} 4. can execute the arrange function. (2)

T{15} F{0} 5. can execute the select function. (2)

T{15} F{0} 6. can execute the copy function. (2)

T{14} F{1} 7. can execute the print function. (2)

T{15} F{0} 8. can execute the find function. (2)

T{15} F{0} 9. can use the database as a tool to instruction in the classroom. (3)

T{15} F{0} 10. can create a classroom management database. (3)

T{15} F{0} 11. provided documentation of lesson plans reflecting the use of a database as a tool to instruction. (3)

T{14} F{1} 12. provided documentation of classroom management database. (3)

APPENDIX P
EXAMPLE OF SAMPLE LESSON PLAN
AND
HARDCOPY OF MANAGEMENT DATABASE

Appendix P
Example of Sample Lesson Plan
and
Hardcopy of Management Database

The first two pages of this appendix contains a copy of a teacher's lesson plan that was used to introduce the concept of a database and carry out the student practice and uses of the database.

The third page, **File: BSI DATA**, is a hardcopy of a student record management database that was created. The information contained in this database includes from left to right; (1) the student's name, (2) the year he/she was tested for the program, (3) the grade the student was in when tested, (4) the school identification number the homeroom teacher's identification number, (5) the reading achievement test score, (6) the math achievement test score, (7) the language achievement test score, and (8) a column for comments. This information is used in tracking and selecting students to participate in one of the pull-out programs in the district.

The fourth page, **File: schedule,** is a copy of two of the teachers' schedules. Both teachers teach in several buildings. The information contained in this database identifies; (1) the school he/she will be servicing by the school identification number, (2) the teacher's name, (3) the time (AM or PM) the teacher will meet with the class, and (4) the grades that will be instructed.

The fifth page, **File: Accumulative**, is a copy of a teacher's database designed to keep track of the students' attendence, conduct and reading and math levels. He wanted to see if there was any correlation among these items. The telephone number was included in the database to show the students that the teacher did have access to their parents and would conference with them if necessary.

Example of Sample Lesson Plan

2/89 GRADE OR CLASS Computer Database Special Needs.

Subject or Section	MONDAY	TUESDAY	WEDNESDAY
Social Studies 2/13/89	Present database of names and addresses Introduction of term: database demonstrate: arrange find		Demonstrate select command Introduce command keys for find arrange
2/21	NO SCHOOL		Review Database commands. Assign schedule & students to computer
2/27	Group 2 Same as group 1		Group 3 Same as group 1

THURSDAY	FRIDAY	NOTES
	Each child will take a turn on the computer calculating the load and arrange command. of the frames + addresses	
	Group 1 arrange all spelling words in alphabetical order. Find all words that have the e vowel	
	Group 1 Introduction of select function and command.	

'ile: BSI DATA
'eport: REPORT

Page 1
MAY 20

ame	Yr. Tested	Grade	School	Teacher	RMsc	MMsc	LMsc	comments	R
hadeed	1986	6	000	#8	92	96	89	Transferred out	2
renda	1986	6	000	#3	77	98	92	Transferred out	1
azel	1986	6	000	#3				Withdrawn from	
ichele	1988	5	000	#7	59	89	97		1
occo	1988	6	000	#3	99	99	80		3
pril	1988	5	000	#3	89	98	95		2
hristop	1989	6	000	#3	99	99	98		2
avid	1989	3	000	#11	98	99	86		3
elinda	1988	5	000	#1	88	94	99		3
ohn	1988	6	000	#3	72	95	42		2
ol	1988	5	000	#7	44	95	43		2
effri	1988	3	000	#11	87	96	96		2
cott	1988	4	000	#9	95	99			2
lkia	1989	3	000	#2	98	98			3
ocelyn	1987	5	000	#12	99	97	90		2

:: Homework return Page 1
ort: sample MAY 27

NAME	FIRST NAME	9/11/89	9/12/89	9/13/89	9/14/89	9/15/89
	Rasheed	yes				
	Mary	yes				
	Carmen	yes				
	Jose	yes				
	Mallka	yes				
	RoseAnn	yes				
	Harvey	no				
	Floyd	yes				
	Handaous	yes				
	Conita	yes				
	Patrick	yes				
	Howdette	no				
	Susan	yes				
	John	no				

e: schedule
ort: SCHEDULE FOR SERVIC

ool	Teacher	Monday	Tuesday	Wednesday	Thursday	Friday	# of Student
	O&P					AM&PL	32
	O				AM&PM		10
	O	PM	AM	PM			13
	O		PM				3
	O	AM		AM		PM	15
	P	PM		PM	PM		9
	P	AM			AM		14
	P		AM&PM				6
	P			AM		PM	5
	O		2g3,1g6				3
	O	3g3,4g4,		3g3,4g4,2g5		3g3,4g4,2	15
	O	3g3,2g4,	3g3,2g4,3	3g3,2g4,3g5			13
	O				2g3,5g4,3g		10
	P	2g4,1g5,		2g4,1g5,6g6	2g4,1g5,6g		9
	P	6g3,3g4,			6g3,3g4,2g		14
	P		3g4,3g6				6
	P			1g3,1g5,3g6		1g3,1g5,3	5

APPENDIX Q
RESULTS OF STUDENT PRE MONITORING CHECKLIST

Appendix Q
Results of Student
Pre Monitoring Checklist

Student # ____
Grade ____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The student...

T{5} F{55} 1. knows the definition of a database. [see below for criterion] (4)

T{0} F{60} 2. arranges information in a database. (4)

T{0} F{60} 3. finds information in a database. (4)

T{0} F{60} 4. selects information in a database. (4)

Criterion: Item 1
The student will provide a definition for database that describes the following:
- a collection of data, information or facts that is put together so it can be easily retrieved and searched

APPENDIX R
RESULTS OF STUDENT POST MONITORING CHECKLIST

Appendix R
Results of Student
Post Monitoring Checklist

Student # ____
Grade ____

The items on this checklist will be addressed on a true (T) and false (F) basis. The appropriate response to each item will be indicated by a circle around the T or F.

* The number in braces, at the end of each item, indicates the goal that it is addressing.

The student...

T{52} F{8} 1. knows the definition of a database. (4)

T{54} F{6} 2. knows how to arrange information in a database. (4)

T{58} F{2} 3. knows how to find information in a database. (4)

T{49} F{11} 4. knows how to select information in a database. (4)

APPENDIX S
POST TRAINING AND IMPLEMENTATION SURVEY AND RESULTS

Appendix S
Post Training and Implementation Survey and Results

DIRECTIONS: Circle your response for each of the following statements.

4 = This a very accurate statement.
3 = This is an accurate statement.
2 = This statement is somewhat accurate.
1 = This statement is inaccurate.

The number of each response to the item is in parentheses.

1. The training that I received broadened my usage of the computer.
   4 - (15) 3 - (0) 2 - (0) 1 - (0)

2. Without the training I would not have been aware of the new approaches to the use of computer in the classroom.
   4 - (13) 3 - (1) 2 - (1) 1 - (0)

3. The new uses that I have learned for the computer have enhanced my instruction in the area of higher order thinking skills.
   4 - (13) 3 - (1) 2 - (1) 1 - (0)

4. The time I dedicated to the training and implementation, in my professional opinion, was very valuable.
   4 - (15) 3 - (0) 2 - (0) 1 - (0)

5. I would like to have more awareness and training programs such as this.
   4 - (15) 3 - (0) 2 - (0) 1 - (0)

6. I will be using the skills that were gained in this training in my classroom on a regular basis.
   4 - (13) 3 - (1) 2 - (1) 1 - (0)

7. I will encourage others to learn/use a database and the methods I have learned.
   4 - (10) 3 - (3) 2 - (2) 1 - (0)